

Enumeration of all possible alignments with $n_1=2$, $n_2=3$

Try to list all the possible alignments of the following two sequences.

seq1: KK, seq2: RRR

Alignments where no residues overlap (everything is aligned to a gap symbol) are allowed.

Alignments where two gaps are aligned are NOT allowed.

How many possible alignments are there? Could you come up with a general formula for the number of alignments for lengths n_1 and n_2 ? (There IS a formula, but it is not trivial to find it...).

Examples:

KK-	K-K-	KK---
RRR	RR-R	--RRR